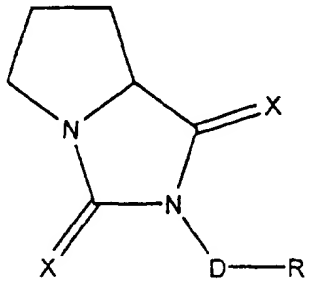
1. (Twice Amended) A compound of the formula:



or a pharmaceutically acceptable salt, ester or solvate wherein:

each X independently is O, S, or NR_2;

R_2 is selected from the group consisting of cyano, nitro, hydrogen, C_1-C_4 alkyl, hydroxy, and C_1-C_4 alkoxy;

D is a direct bond or C_1-C_8 alkyl or alkenyl;

R is selected from the group consisting of hydrogen, phenyl, biphenyl, cyclopropyl, cyclobutyl, cyclopentyl, cycloheptyl, cyclooctyl, naphthyl, 1,2,3,4-tetrahydronaphthyl, indenyl, azulenyl, fluorenyl, anthracenyl, isoindolyl, indolinyl, benzofuranyl, benzothiophenyl, indazolyl, benzimidazolyl, tetrahydrofuranyl, tetrahydropyranyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, tetrahydroquinolinyl, quinolizinyl, furyl, benzofuranyl, thiophenyl, imidazolyl, oxazolyl, benzoxazolyl, benzoxazinyl, thiazolyl, isoxazolyl, isotriazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl, trithianyl, indolizinyl, pyrazolyl, pyrazolinyl, pyrazolidinyl, benzopyranyl, thienyl, tetrahydroisoquinolinyl, cinnolinyl, phthalazinyl, quinazolinyl, quinoxalinyl, naphthyridinyl, pteridinyl, carbazolyl, phenazinyl, phenothiazinyl, phenoxazinyl, and adamantyl;

wherein R may be optionally substituted with one substituent which is selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl, C_2-C_6 straight or branched chain alkenyl, C_1-C_4 alkoxy, C_2-C_4 alkenyloxy, phenyl, phenoxy, benzyloxy, and amino;

wherein when R is hydrogen, then D is C_5-C_7 alkyl or C_5-C_8 alkenyl;

wherein when R is phenyl and D is a bond, then R is substituted with phenyl, hydroxyl, trifluoromethyl, C_2-C_6 straight or branched chain alkyl or alkenyl, C_3-C_4 alkoxy, C_2-C_4 alkenyloxy, phenoxy, or benzyloxy;

C 2
Cont

wherein when R is 4-trifluoromethylphenyl, then both X substituents are O;

wherein when both X substituents are O and D is C_2 alkyl, then R is not phenyl substituted with 4-nitro or 4-amino;

wherein when both X substituents are O and R is H, D is not C_1-C_8 alkyl;

wherein when both X substituents are O and D is C_1 alkyl, R is not phenyl;

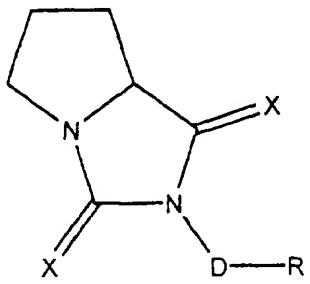
wherein when both X substituents are O and D is a direct bond, then R is not phenyl substituted with 3-trifluoromethyl;

wherein when one X is O, the other X is S, and D is a direct bond, then R is not phenyl substituted with 3-trifluoromethyl; and

wherein when both X substituents are O and D is C_3 straight chain alkyl, then R is not phenyl substituted with 3-methoxy.

C2

3. (Amended) A pharmaceutical composition comprising an effective amount of a compound and a pharmaceutically acceptable carrier, wherein the compound is of the formula:



where

each X independently is O, S, or NR_2;

R_2 is selected from the group consisting of cyano, nitro, hydrogen, C_1-C_4 alkyl, hydroxy, and C_1-C_4 alkoxy;

D is a direct bond or C_1-C_8 alkyl or alkenyl;

R is an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring, wherein when R is an alicyclic monocyclic heterocyclic ring containing a nitrogen heteroatom, the alicyclic monocyclic heterocyclic ring contains only one nitrogen heteroatom;

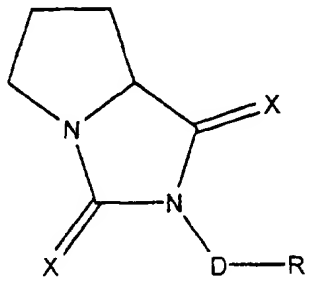
wherein R is optionally substituted with one substituent selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl, C_2-C_6 straight or branched chain alkenyl, C_1-C_4 alkoxy, C_2-C_4 alkenyloxy, phenyl, phenoxy, benzyloxy, and amino;

or a pharmaceutically acceptable salt, ester, or solvate thereof.

Please add the following new claims 63-68:

C 3

63. (New) The pharmaceutical composition according to claim 3, wherein the compound is selected from compounds of the formula:



or a pharmaceutically acceptable salt, ester or solvate wherein:

each X independently is O, S, or NR_2;

R_2 is selected from the group consisting of cyano, nitro, hydrogen, C_1-C_4 alkyl, hydroxy, and C_1-C_4 alkoxy;

D is a direct bond or C_1-C_8 alkyl or alkenyl;

R is selected from the group consisting of hydrogen, phenyl, biphenyl, cyclopropyl, cyclobutyl, cyclopentyl, cycloheptyl, cyclooctyl, naphthyl, 1,2,3,4-tetrahydronaphthyl, indenyl, azulenyl, fluorenyl, anthracenyl, isoindolyl, indolinyl, benzofuranyl, benzothiophenyl, indazolyl, benzimidazolyl, tetrahydrofuranyl, tetrahydropyranyl, pyridyl, pyrrolyl, pyrrolidinyl, pyridinyl, pyrimidinyl, purinyl, quinolinyl, isoquinolinyl, tetrahydroquinolinyl, quinolizinyl, furyl, benzofuranyl, thiophenyl, imidazolyl, oxazolyl, benzoxazolyl, benzoxazinyl, thiazolyl, isoxazolyl, isotriazolyl, oxadiazolyl, triazolyl, thiadiazolyl, pyridazinyl, pyrimidinyl, pyrazinyl, triazinyl,

trithianyl, indolizinyl, pyrazolyl, pyrazolinyl, pyrazolidinyl, benzopyranyl, thienyl, tetrahydroisoquinolinyl, cinnolinyl, phthalazinyl, quinazolinyl, quinoxalinyl, naphthyridinyl, pteridinyl, carbazolyl, phenazinyl, phenothiazinyl, phenoxazinyl, and adamantyl;

wherein R may be optionally substituted with one substituent which is selected from the group consisting of halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl, C_2-C_6 straight or branched chain alkenyl, C_1-C_4 alkoxy, C_2-C_4 alkenyloxy, phenyl, phenoxy, benzyloxy, and amino;

C 3 cont

wherein when R is hydrogen, then D is C_5-C_7 alkyl or C_5-C_8 alkenyl;

wherein when R is phenyl and D is a bond, then R is substituted with phenyl, hydroxyl, trifluoromethyl, C_2-C_6 straight or branched chain alkyl or alkenyl, C_3-C_4 alkoxy, C_2-C_4 alkenyloxy, phenoxy, or benzyloxy;

wherein when R is 4-trifluoromethylphenyl, then both X substituents are O;

wherein when both X substituents are O and D is C_2 alkyl, then R is not phenyl substituted with 4-nitro or 4-amino;

wherein when both X substituents are O and R is H, D is not C_1-C_8 alkyl;

wherein when both X substituents are O and D is C_1 alkyl, R is not phenyl;

wherein when both X substituents are O and D is a direct bond, then R is not phenyl substituted with 3-trifluoromethyl;

wherein when one X is O, the other X is S, and D is a direct bond, then R is not phenyl substituted with 3-trifluoromethyl; and

wherein when both X substituents are O and D is C_3 straight chain alkyl, then R is not phenyl substituted with 3-methoxy.

64. (New) The pharmaceutical composition according to claim 3, wherein the compound is selected from the group consisting of:

(7aS) -2-(1-Naphthyl) perhydropyrrolo [1, 2-c] imidazole-1, 3-dione,

(7aS) -2-(2'-Phenyl) phenylperhydropyrrolo [1, 2-c] imidazole-1, 3-dione,

C 3 Cont

(7aS) -2- (4- (Trifluoromethyl) phenyl) perhydropyrrolo [1, 2-c] imidazole-1, 2-dione,

2-benzyl-3-thioxo-2, 5, 6, 7, 7a-pentahydro-2-azapyrrolizin-1-one,

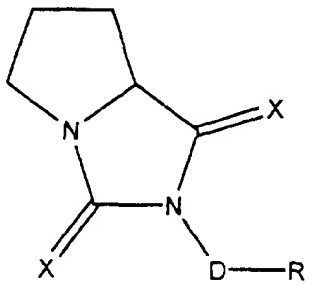
2-hexyl-2, 5, 6, 7, 7a-pentahydro-2-azapyrrolizine-1, 3-dione,

2-(2-ethyl) phenyl-2, 5, 6, 7, 7a-pentahydro-2-azapyrrolizin-1, 3-dione,

2-(3-phenylpropyl) -3-thioxo-2, 5, 6, 7, 7a-pentahydro-2-azapyrrolizin-1-one, and

2- (2-phenylethyl) -3-thioxo-2, 5, 6, 7, 7a-pentahydro-2-azapyrrolizin-1-one.

65. (New) A pharmaceutical composition comprising an effective amount of a compound and a pharmaceutically acceptable carrier, wherein the compound is of the formula:



where

each X independently is O, S, or NR_2;

R_2 is selected from the group consisting of cyano, nitro, hydrogen, C_1-C_4 alkyl, hydroxy, and C_1-C_4 alkoxy;

D is a direct bond or C_1-C_8 alkyl or alkenyl;

R is hydrogen, or an alicyclic or aromatic, mono-, bi- or tricyclic, carbo- or heterocyclic ring;

cl 3 cont

wherein R is optionally substituted with one substituent selected from the group consisting of hydrogen, halo, hydroxyl, nitro, trifluoromethyl, C_1-C_6 straight or branched chain alkyl, C_2-C_6 straight or branched chain alkenyl, C_1-C_4 alkoxy, C_2-C_4 alkenyloxy, phenyl, phenoxy, benzyloxy, and amino;

wherein when both X substituents are O and D is a bond, R is not phenyl;

wherein when one X is O and the other is S and D is a bond, then R is not phenyl;

wherein when both X substituents are O and R is H, D is not C_1-C_8 alkyl;

or a pharmaceutically acceptable salt, ester, or solvate thereof.

66. (New) The pharmaceutical composition of claim 65, further comprising an additional neurotrophic factor other than said compound.

67. (New) A method of treating a neurological disorder in an animal, comprising:

administering to the animal an effective amount of a compound to stimulate growth of damaged peripheral nerves or to promote neuronal regeneration, wherein the compound is one of claim 1.

68. (New) A method of stimulating growth of damaged peripheral nerves, comprising:

administering to damaged peripheral nerves an effective amount of a compound to stimulate or to promote growth of the damaged peripheral nerves, wherein the compound is one of claim 1.